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## **DEPARTMENT OF TRANSPORTATION**

### **National Highway Traffic Safety Administration**

#### **49 CFR Part 571**

**[Docket No. NHTSA-2013-0121]**

#### **Federal Motor Vehicle Safety Standards; Occupant Crash Protection**

**AGENCY:** National Highway Traffic Safety Administration (NHTSA), DOT.

**ACTION:** Denial of petitions for reconsideration.

**SUMMARY:** This document denies petitions for reconsideration submitted by bus manufacturers IC Bus, LLC (IC Bus), Daimler Trucks North America (Daimler Trucks) and Prevost, concerning a November 25, 2013 final rule requiring seat belts on large buses. IC Bus and Daimler Trucks petitioned to modify the definition of “over-the-road bus” specified in the final rule. NHTSA is denying these petitions because any change to the definition may serve to reduce the standard’s applicability, contrary to Congressional and NHTSA intent, and the definition of “over-the-road bus” is sufficiently clear. Prevost petitioned to revise the seat belt anchorage strength requirements for last row seats having no passenger seating behind them. NHTSA is denying this petition primarily because the requested force level reduction may set strength levels below an acceptable level for a dynamic environment.

**DATES:** [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**FOR FURTHER INFORMATION CONTACT:** For non-legal issues: Mr. Vinay Nagabhushana, Office of Crashworthiness Standards, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590. Telephone: (202) 366-1452. Facsimile: (202) 493-2739.

For legal issues: Ms. Deirdre Fujita, Office of Chief Counsel, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590. Telephone: (202) 366-2992. Facsimile: (202) 366-3820.

**SUPPLEMENTARY INFORMATION:** This document denies petitions for reconsideration of a November 25, 2013 final rule requiring seat belts on large buses (78 FR 70416). We first deny the petitions submitted by bus manufacturers IC Bus and Daimler Trucks to modify the definition of “over-the-road bus” specified in the final rule. These petitions are denied because any change to the definition may serve to reduce the standard’s applicability, contrary to Congressional intent and the safety need addressed by the rule, and the current definition of “over-the-road bus” is sufficiently clear as to which buses must be equipped with seat belts. Second, this document denies a petition for reconsideration from bus manufacturer Prevost to revise the seat belt anchorage strength requirements for last row seats having no passenger seating behind them. This petition is denied because, as explained in the 2013 final rule, the agency is concerned about the interchangeability of these seats with those equipped with integrated seat belts and the risk that a seat that is certified to a lesser requirement could be moved to a row that has passenger seats behind it. Further, we deny the petition because the requested force level reduction may set strength levels below an acceptable level for a dynamic environment.

## **I. Motorcoach Definition**

On July 6, 2012, President Obama signed the “Moving Ahead for Progress in the 21<sup>st</sup> Century Act” (MAP-21), which incorporates the “Motorcoach Enhanced Safety Act of 2012” in subtitle G. Section 32703 (a) of this legislation calls for prescribing regulations for seat belts at all designated seating positions in “motorcoaches.” Section 32702(6) states that “[t]he term

‘motorcoach’ has the meaning given the term ‘over-the-road bus’ in section 3038(a)(3) of the Transportation Equity Act for the 21<sup>st</sup> Century (49 U.S.C. 5310 note)” with two specific exceptions.<sup>1</sup> Section 3038(a)(3)(49 U.S.C. 5310 note) defines the term “over-the-road bus” as a bus characterized by an elevated passenger deck located over a baggage compartment.<sup>2</sup>

On November 25, 2013, NHTSA issued a final rule on occupant protection in large buses, fulfilling the statutory mandate in section 32703(a) of MAP-21. The 2013 final rule amended Federal Motor Vehicle Safety Standard (FMVSS) No. 208, “Occupant crash protection,” to require lap/shoulder seat belts for each passenger seating position in all new over-the road buses regardless of gross vehicle weight rating (GVWR). In the final rule, consistent with MAP-21, NHTSA incorporated the term “over-the-road bus” into FMVSS No. 208 and the definition for the term set forth in MAP-21. Further, finding a safety need to improve occupant protection for passengers on other large buses, the agency also required seat belts in new buses, other than over-the road buses, with a GVWR greater than 11,793 kilograms (kg) (26,000 pounds (lb)).<sup>3</sup>

### **Petitions for Reconsideration**

In response to the November 25, 2013 final rule, the agency received petitions for reconsideration requesting the agency further define the term “over-the road bus” with dimensional specificity and/or with other bus attributes. IC Bus stated that the current definition of over-the-road bus is ambiguous and the terms “elevated passenger deck” and “baggage compartment” are undefined and subject to interpretation. IC Bus petitioned the agency to –

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<sup>1</sup> The two exceptions are buses used for public transportation provided by, or on behalf of, a public transportation agency, and school buses.

<sup>2</sup> The definition also appears in 49 CFR 37.3.

<sup>3</sup> The exceptions in the final rule are non-over-the-road transit buses, school buses, prison buses and perimeter seating buses.

- modify the definition such that “over the road bus means a bus characterized by an elevated passenger deck to accommodate a baggage compartment underneath, except a school bus,” and
- define the term “elevated passenger deck” based on physical attributes of the bus such as passenger compartment floor height as measured from the ground (scaled for different GVWR) or define a passenger compartment floor height requirement with respect to some specific vehicle reference point.

Daimler Trucks also petitioned the agency to modify the definition of over-the road bus to include objective dimensional criteria for the elevated passenger deck, such as floor height from the ground (variable for different GVWR), and also to define baggage compartment in terms of volume per seating position.

### **Agency Response**

The petitioners did not provide information supporting the requested action. They made broad suggestions as to how the definition of over-the-road bus might be quantified, but specific criteria and supporting data were lacking in the submissions. The petitioners did not provide data on the floor height or luggage compartment volume for any bus body type. They did not discuss what floor height or luggage compartment volume should be used to distinguish an over-the-road bus from other buses, and the basis for the criterion.

NHTSA has limited discretion regarding the “motorcoach” definition and the application of the November 2013 final rule. Section 32702(6) of MAP-21 precisely defines the meaning of the term “motorcoach,” incorporating the “over-the-road bus” definition used in 49 U.S.C. 5310 note (which the petitioners seek to change). Further, section 32703(a) requires the Secretary to “prescribe regulations requiring safety belts to be installed in motorcoaches at each designated

seating position.” We note that buses are built for different purposes to different specifications, with varying floor height, floor length, compartment sizes, etc. Adding dimensional limits to the bus attributes as the petitioners suggest would reduce the number of vehicles fitting under the definition, which in turn would reduce the number of buses that would be required to have seat belts. The agency is concerned that such a reduction in the number of buses subject to the seat belt requirement would be contrary to Congress’s intent to enhance the safety of buses used for passenger transport for compensation.<sup>4</sup> MAP-21 specified the over-the-road bus definition to be used by the agency, without regard to vehicle weight and without indicating any additional specificity in regards to floor height or luggage compartment volume.

Additionally, NHTSA does not believe that the requested action is needed to clarify the application of the seat belt requirement. The applicability of the requirement is quite clear. As previously discussed, all buses with a GVWR greater than 11,793 kg (26,000 lb) must have seat belts.<sup>5</sup> For buses with GVWRs of 11,793 kg (26,000 lb) or less, if the vehicle has “an elevated passenger deck located over a baggage compartment,” it must have seat belts.

We believe that a bus manufacturer can determine whether the vehicle they manufacture must have seat belts, based on the vehicle’s GVWR and whether the bus has a luggage compartment under any part of the passenger deck. A bus that does not fit the definition is one without a luggage-carrying compartment under any part of the passenger deck.

Based on the above, the agency declines the petitioners’ request to modify the definition of over-the-road bus.

## **II. Reduced Anchorage Strength for Last Row Seats**

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<sup>4</sup> Section 32702(7) of MAP-21 defines “motorcoach services” as “passenger transportation by motorcoach for compensation.”

<sup>5</sup> See footnote 3, *supra*, for exceptions.

As part of the motorcoach seat belt requirements, the agency specified that the seat belt assembly anchorages must meet the requirements of FMVSS No. 210, “Seat belt assembly anchorages,” to ensure effective occupant restraint and to reduce the likelihood of their failure. Further, the rule required that the seat belt anchorages must be integrated to the seat structure, except for the belt anchorages in the last row of the coach (if there is no wheelchair position or side emergency door behind these seats) and in the driver seating position. For the excluded seats in the last row, the final rule provided manufacturers the option of either having an integrated seat belt or attaching the seat belt anchorages to the bus side or back structure, as such placement would not impede ingress or egress of passengers in the coach.

### **Petition for Reconsideration**

In response to the final rule, Prevost petitioned asking for reduced “seat retention” requirements for last row seats where there is no possibility of any passengers being behind them. Prevost is concerned that “the very last seats are secured over a thin metal bulkhead which did not require being very rigid when there were no seat belts”<sup>6</sup> and believes that this bulkhead will require reinforcement. It claimed that “[a]ny strength requirement is transmitted into added weight which in turn transferred into fuel consumption.” The petitioner argued that FMVSS No. 210 would be applicable to any other seats in the motorcoach where there would be combined belted occupant and inertial loading of the seat plus loading from the unbelted occupant behind, but for last row seats, there is no possibility of occupant loading from behind so the FMVSS No. 210 load should be reduced. No supporting data was provided in the petition.

### **Agency Response**

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<sup>6</sup> Docket No. NHTSA-2013-0121-005.

The agency has carefully considered the petitioner's request to reduce the seat belt anchorage forces for the subject seats. We are denying the request for the reasons explained below.

We first note that Prevost's petition is essentially a repeat of the comments it made to the notice of proposed rulemaking (NPRM)<sup>7</sup> preceding the final rule. The agency responded to that comment in the preamble of the final rule as follows:

We are unable to agree to Prevost's suggestion that the strength requirements be adjusted (reduced) for seats where there are no other seats behind it (and therefore no unbelted passengers seated behind it). We are aware that some operators of covered buses have changed the passenger seating configuration from that set by the factory or have removed and reinstalled seats. If "weaker" seats are moved after the factory installation to a position that had a passenger seat behind it, the weaker seat would not provide the performance required by FMVSS No. 210. Furthermore, this final rule provides some of the flexibility Prevost seeks. Under this final rule, seats with no other seats behind them are not required to have the lap/shoulder belt anchorages attached to the seat structure. For these seats, the lap/shoulder belt anchorages can be attached directly to the vehicle structure. (78 FR at 70455)

Consistent with our final rule response, we remain concerned about the interchangeability of the seats with integrated seat belts, particularly in consideration of the long life of these vehicles (20+ years) and subsequent sales to operators that may need to reconfigure seating. If the operator moved the reduced-strength seat to a position that had a passenger seat behind it, the moved seat will not have the characteristics needed to withstand the loading from the aft passengers. If the reduced-strength seat were in a position that had a storage space behind it, loose items may create forward loading in a crash, similarly to rear occupant loading. The petitioner did not address this point. Similarly, no information or analysis was provided to suggest a value by which the seat belt anchorage strength requirement should be reduced.

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<sup>7</sup> 75 FR 50958 (August 18, 2010).

The agency is not convinced of the merits of lowering the strength requirement per se. NHTSA conducted a full scale 48 kilometers per hour (km/h) (30 miles per hour) crash test of a 2000 Model Year MCI 102EL3 Renaissance motorcoach (capacity of 54 passengers seats). Post-test examination of the bus<sup>8</sup> found shoulder belt D-ring excursion for one of the seats (seating position 11R). The top bolt of the D-ring shoulder belt mount attached to the seat back by two bolts sheared resulting in forward excursion of the D-ring. This was a row of 7G Amaya seats with two 50<sup>th</sup> percentile dummies restrained with lap/shoulder belts. There was no added reinforcement to the floor or to the side structure and no occupant loading from behind. This seat design passed the FMVSS No. 210 force requirements in our static pull tests. Although the D-ring mount failure did not result in dummy contact with the seats in front of them or result in high injury values, it suggests that the dynamic loading was sufficient to cause partial failure of the torso anchorage hardware without any loading from dummies in the row behind. Thus, the agency is concerned that any reduction in the seat belt loading below the FMVSS No. 210 level may reduce the torso anchorage strength to an unacceptable level.

In addition, data indicate that the last row of seats may be subject to loading unique to the rear of the bus. The vehicle accelerometer data from the full scale crash test were suggestive of forward flexing and dynamic rebound near the rear wall of the passenger compartment, compared to the front of the passenger compartment.<sup>9</sup> The static FMVSS No. 210 test cannot account for the dynamic forward displacement and rebound of the vehicle structure to which the seat or seat belt may be anchored and any weakening of the attachments that may result from

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<sup>8</sup> Figure 7 in Technical Report DOT HS 813 335, Docket NHTSA-2013-0121.

<sup>9</sup> The maximum dynamic deflection near the front of the passenger compartment was 1,727 mm (68 inches) and the maximum dynamic displacement near the rear wall was 1,930 mm (76 inches). The rear wall separates the engine compartment in large over-the-road buses and in other buses from the cargo compartment.



such dynamic phenomena. Thus, reducing the anchorage strength requirements for this last row of seats may set strength levels below an acceptable level for a dynamic environment.

In its petition, Prevost states that reducing the strength requirement of FMVSS No. 210 for last row seats would result in a weight reduction and fuel savings. The agency is not convinced that there would be a significant weight reduction or fuel savings. Prevost did not provide information substantiating its claims, such as data on the thickness changes to the metal bulkhead (for example) required to secure seat belts designed to comply with the FMVSS No. 210 requirements compared to current designs.

Further, the final rule permits—rather than requires—manufacturers to attach the seat belts to the vehicle structure for last-row seats. In the final rule, NHTSA stated that “[l]ap/shoulder belt equipped seats that meet the requirements of FMVSS No. 210 are available in the U.S. that are equivalent in weight to the European seats.” (78 FR at 70460.) We concluded that, depending on the efficiency of the structural design, there would be little or no weight penalty associated with the structural changes needed to meet FMVSS No. 210. Thus, the petitioner could use the integrated seat belt design for the last row seats if attaching the belt to the bus rear wall is problematic. Regardless, we emphasize that the petitioners have not shown that there will be a weight penalty for seat belt anchorages integrated into the vehicle structure. The increased flexibility of attachment to the vehicle rather than the seat has expanded the opportunity for efficient, innovative and practicable designs for manufacturers choosing to attach the belts to the vehicle structure.

For the reasons stated above, NHTSA hereby denies all petitions for reconsideration of the November 25, 2013 final rule amending FMVSS No. 208.

Authority: 49 U.S.C. 322, 30111, 30115, 30117 and 30166; delegation of authority at 49 CFR 1.95.

Issued on: March 31, 2016.

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Raymond R. Posten,  
Associate Administrator for  
Rulemaking.

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